Hidden Hunger Among School Children In Ilocos Sur: An Assessment

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Abstract

The study was conducted among 270 school children in Ilocos Sur randomly selected from nine municipalities, namely: Sta. Catalina, Sto. Domingo, Cabugao, Santa, San Esteban, Candon, Lidlidda, Suyo, and Cervantes. It attempted to determine the factors that may lead to hidden hunger among school children in Ilocos Sur.

The study made use of the descriptive method of research with a questionnaire checklist as the main instrument in data gathering. In-depth interview was done to ascertain the presence of symptoms of Vit. A deficiency like night blindness and poor eyesight. Pupils who claimed to have poor eyesight and with Bitots spots were asked to read some letters at about 7-10 feet to further ascertain such problem. For the iodine determination of household salts, each respondent was asked to bring to school a tablespoon of their household salt for iodine content testing. A solution which is being used by the Department of Health (DOH) for testing was utilized. For iron deficiency, the conjunctival color was assessed for pallor. Likewise, to determine the pupils' nutritional status their height and weight were measured. Frequency counts, percentages, and chi-square test were used to treat the data.

The results of the study revealed that majority of the respondents were female, between 10-11 years old, and Roman Catholic. Less than one-half of the respondents' fathers were high school graduates while one-third of their mothers were college graduates. The respondents' parents had a monthly income of P4001 and above, derived from agricultural activities.

*Some respondents manifested signs and symptoms of Vit. A deficiency. Majority of the respondents had average weight but were overweight. Some manifested signs and symptoms of micronutrient deficiency. The most common signs and symptoms identified were rough skin, poor eyesight, presence of Btots spots, and night blindness. Majority were found to have pale conjunctiva which is suggestive of iron deficiency. Majority were **not** using iodized salt which made them more prone to iodine deficiency. All the respondents ate snacks in between meals and majority of them preferred the combination of vegetable and meat for their viand.*

Introduction

If the Philippine health situation were assessed at present. it may be said that the Filipinos are healthier today than in the 1960's. There are several justifications to this claim.

Nisce, et. al. (1995) presents some positive aspects of the Philippine health situation. To mention a few, life expectancy at birth has risen from 57 years in 1960 to 65 years in 1990. Communicable diseases declined at 74% over the past 40 years. Polio and neonatal tetanus are nearing eradication due to the wide coverage of immunization program.

With this promising scenario of the Philippine health status, however, there are still other negative aspects of the present health situation. Nisce also presents facts as follows: the Philippines has a fast-growing population; there is continued high level of malnutrition especially among female children; there are high rates of disability i.e., 11 persons/1000 population have some form of disability such as orthopedic handicap, blindness, deafness, mental retardation, and speech impairment.

There are several nutrition problems that are starting to gain high incidence in the Philippines today, which is affecting particularly the school children. These are the micronutrient deficiencies like Vitamin A, iron, and iodine deficiencies. These can be prevented through simple measures. Hence, this study on the hidden hunger among school children in Ilocos Sur.

The findings will be the strong basis for designing programs that will improve the health status of school children. As members of the academe, the program will focus on the role of the University of Northern Philippines (UNP). College of Health Sciences (CHS) in Information, Education, and Communication (IEC) regarding the effects of micronutrient deficiencies on the growth and development: of children.

Objectives of the Study

This study aimed to look into the factors that may lead to hidden hunger among school children in Ilocos Sur. Specifically, it sought to do the following;

1. Present the socio-demographic and economic profile of school children.
2. Determine the nutritional status of the school children.
3. Identify the micronutrient deficiencies among school children.
4. Present the food preferences and eating habits of school children.
5. Identify the predisposing factors of hidden hunger.

Review of Related Literature

It has been found out that the Philippines is the highest in micronutrient malnutrition affecting a large portion of the population. This type of malnutrition is also referred to as

"hidden hunger' because people with this condition usually do not feel or complain of anything unusual and other people cannot easily recognize that they are suffering from that kind of malnutrition.

Vitamin A deficiency is a condition characterized by low levels of Vrt. A resulting primarily from inadequate dietary intake of this nutrient and secondarily from poor absorption and utilization which may lead to serious eye lesions (Nisce et al, 1995).

The Food and Nutrition Research Institute (FNRD) in a nationwide survey in 1982 found out that 1.8% of children 2-6 years old had night blindness, while 1.4% had Bitots spots. (Departm ent of Health, 1983).

The FNRI again conducted a nationwide survey in 1987 and the findings showed that a dietary intake of children 6 months to 6 years of age was only 66.4% and 41.1% adequate, respectively. The low intake of vitamins, low prevalence and duration of breast feeding, and high incidence of communicable diseases like measles, diarrhea, and acute respiratory infection (ARD) favor the development of Vit. A deficiency.

Iodine deficiency disorders refer to a group of nine clinical entities caused by inadequacy of dietary iodine, which includes goiter, hypothyroidism, cretenism, fetal wastage, and increased morbidity and mortality (Nisce et. al, 1995).

The FNRI surveys showed 31% prevalence of iodine deficiency in 1982 and 35% prevalence in 1987. Provinces with goiter prevalence higher than 10% were Mt Province, Bukidnon, Oriental Mindoro, Abra, Kalinga Apayao, Benguet, Pangasinan, Agusan del Sur, Quirino, Batangas, Cavite, Quezon, Romblon, and Marinduque. Other findings in that same study were: females were more affected by goiter than males; it may affect any age group; and the most serious effect of iodine deficiency is on the brain development in the fetus and in the young child.

Iron deficiency anemia (IDA) is a condition in which hemoglobin concentration of the blood is below accepted values. FNRI surveys in 1982 and 1987 revealed that among the 6-11 month-old infants, the prevalence in iodine deficiency increased from 513% in 1982 to 70.4% in 1987.

Operational Definition of Tens

***Hidden* hunger** refers to micronutrient deficiencies as *Vitamin* A, iodine, and iron deficiencies. The signs and symptoms associated with these deficiencies are not readily observed because people with these conditions usually do not feel or complain of anything unusual.

Night blindness or nyctalopia refers to the disability to see in dim light resulting to stumbling or bumping against objects.

Bitot spots refers to well demarcated, superficial, dry, grayish, silvery or chalk-like, foamy plaques to the comea.

Rough skin refers to the condition in which the skin has lost its smoothness, and elasticity and there may be presence of skin lesions.

Poor eyesight refers to the condition in which visual acuity is affected as manifested by difficulty in reading or visualizing letter at a normal distance.

Iron deficiency refers to the condition in which the hemoglobin concentration of the blood is below the normal value as manifested by conjunctival pallor.

Methodology

Instrument. The study made use of the descriptive method of research with the questionnaire checklist as the main tool in data gathering coupled by interview and physical examination. Interview was made to ascertain the presence of symptoms of *Vit* A deficiency like night blindness and poor eyesight. Those pupils who were identified with such problems were asked to read some letters at a certain distance to further ascertain the presence of poor eyesight For iodine determination of the household salts, each respondent was requested to bring a tablespoon of their household salt for iodine content testing, A solution used by the Department of Health (DOH) in testing the iodine content of the salt was used. For iron deficiency, the conjunctival color was assessed for pallor. To detennine the nutritional status of the pupils, the height and weight were measured. The data gatherers were the UNP graduate nurses who were trained to do the interview and the examination of the eyes, skin, and conjunctiva.

Sample and population. Chosen respondents were five pupils from each grade level from nine municipalities of Ilocos Sur namely. Santa Catalina, Santo Domingo, Cabugao, Santa, San Esteban, Candon, Lidlidda, Suyo, and Cervantes. A total of 270 pupils representing the province of Ilocos Sur were the respondents of this study.

Statistical treatment. Frequency counts and percentages were used in the statistical treatment of the data gathered.

Discussion of Results

Socio-Demographic and Economic Profile of the Respondents

Table I presents the socio-demographic and economic profile of the respondents which include sex, age, religion, parents' educational attainment and occupation, and family income.

Sex. Table 1 shows that female respondents (52.96%) predominated over the male respondents (47.04%).

Table 1. Socio-demographic and economic profile of respondents.

SOCIO-DEMOGRAPHIC & ECONOMIC CHARACTERISTIC	NO.	%
Sex		
Male	127	47.04
Female	143	52.96
Age (years)		
6–7	61	22.59
8–9	81	30.00
10–11	91	33.70
11–13	37	13.71
Religion		
Roman Catholic	212	78.52
Protestant	31	11.48
Iglesia ni Kristo	10	3.70
UCCP	4	1.48
Ohers	13	4.82
Educational attainment of mother		
No formal schooling	6	223
Elementary graduate	73	27.14
High school graduate	80	29.74
College graduate	86	31.97
Post-graduate	24	8.92
Educational attainment of father		
No formal schooling	9	3.49
Elementary graduate	53	20.54
High school graduate	108	41.86
College graduate	70	27.13
Post graduate	18	6.98
Occupation of parents		
. Professional	30	11.11
Service provider	58	21.48
Clerical	16	5.92
Business	20	7.41
Agricultural	103	38.15
Laborer	43	15.93
Monthly family income (pesos)		
Below P1000	61	22.59
1001–2000	44	. 16.30
2001–3000	40	14.81
3001–4000	20	7.41
4001 & above	105	38.89

Age. Among the 270 respondents, 33.70% were 10-11 years old; 30%, 8-9 years old; 22.59%, 6-7 years old; and 13.71%, 12-13 years old

Religion. Majority (78.52%) of the respondents were Roman Catholic; 11.48% were Protestants; 4.82% belonged to other religious affiliations like Rizalista, Baptist, Mormons, etc; 3.70% were Iglesia ni Cristo; and only 1.48% were affiliated with the United Church of Christ in the Philippines.

Mothers' educational attainment. The mothers of 31.97% of the respondents were college graduates; 29.74% were high school graduates 27.14% finished elementary, 2.23% never had formal schooling; 8.92% had a chance to pursue a post graduate course.

Fathers' **educational attainment.** Almost one-half of the respondents' fathers (41.86%) were high school graduates; 27.13% were college graduates; 20.54% were elementary graduates; 6.98% pursued post graduate studies; and 3.49% never entered fonnal schooling.

Occupation of parents. The occupation of the respondents parents were categorized as professional, service provider, clerical, business, agricultural, and laborer. More than one-third (38.15%) of the parents eamed their livelihood from agricultural activities; 21.48% were service providers; 15.93% were laborers; 11.11% were professionals; 7.41% were engaged in business; and 5.92% had clerical jobs.

Family income. Table 1 also shows that 38.89% earned a monthly income of P4001 and above; 22.59% eamed an income below P1000; 16.30%, P1001-2000; 14.81% earned P2001-3000; and 7.41% were within the income bracket of P3001-4000.

Nutritional Status of Respondents

Table 2 shows the nutritional status of the respondents measured in terms of their weight and height

Table 2. **Nutritional status of respondents.**

NUTRITIONAL STATUS	NO.	%
Weight		
Underweight	78	28.89
Average	155	57.41
Overweight	37	13.70
Height		
Underheight	19	7.04
Average	18	6.66
Overheight	233	86.30

Weight. Majority of the respondents (57.41%) had an average weight; 28.89% were underweight; while 13.70% were overweight.

Height. The majority of the respondents (86.30%) were overheight; 7.04% of them were underheight; while 6.66% had an average height.

Nutritional Deficiency of Respondents

Table 3 shows that 70.74% of the respondents were suffering from Vit. A deficiency as evinced by the following symptoms: rough skin (41.36%), poor eyesight (23.04%); presence of Bitots spots (21.47%) and night blindness (14.14%).

The iodized testing revealed that most of the respondents (84.81%) were using in their homes salt without iodine content and this may predispose them to iodine deficiency.

More than one half of the respondents (51.85%) were found deficient in iron as manifested by conjunctival pallor.

Table 3. Nutritional deficiency of respondents.

NUTRITIONAL DEFICIENCY	NO.	%
Vitamin A Deficiency	N=191	
Bitots-spot	41	21.47
Poor eyesight	44	23.04
Night blindness	27	14.14
Rough skin	79	41.36
Iodine Deficiency	N=270	
Iodized salt testing		
Positive	41	15.19
Negative	229	84.81
Iron Deficiency	N=270	
Positive (conjunctical paila)	140	51.85
Negative	130	48.15

Food Preferences and Eating Habits of the Respondents

Food preferences. Multiple responses were elicited from the respondents regarding their food preference. However, the greatest number (82.89%) gave their preference to the combination of meat and vegetables for their viand (Table 4). The next preference was for dairy products (68.15%), followed by seafoods (55.93%), vegetables alone (35.18%), meat and poultry (30.0%). Dried fish was the least preferred food of the respondents (28.89%).

Table 4. Food preferences and eating habits of school children.

FOOD PREFERENCE AND EATING HABIT	NO.	%
Food Preferred		
Meat/Poultry	81	30.00
Combination of meat/vegetables	223	82.59
Dairy products	184	68.15
Seafoods	151	55.93
Dried fish	78	28.89
Vegetables	95	35.18
Eating in **between meals**		
Yes	220	81.48
No	50	18.52

Eating habits. It was also found out in the study that almost all the respondents (81.48%) ate snacks in-between meals.

Conclusions

Based on the findings of the study, the following conclusions were drawn.

1. Majority of the school children were fumale, 10-11 years old.
2. Roman Catholics still predominated over all religions in Ilocos Sur.
3. One-third of the respondents' mother were college graduates, while their fathers were high school graduates.
4. One-third of the respondents' parents were engaged in agriculture with a monthly earning of P4001 and above.
5. More than one-half of the respondents had an average weight but they were overheight.
6. Some of the school children were deficient *in* Vit. A and iron. The most oommon signs and symptoms identified for *Vit.* A deficiency are rough skin, **poor** eyesight, Bitots spots, and night blindness. Likewise, majority were found to have conjunctiva! pallor which is indicative of iron deficiency.
7. Almost all of the respondents were not using iodized salt *in* their homes which make them prone to iodine deficiency disorders like goter.
8. The majority of respondents preferred the combination of meat and vegetables for their viand
9. Majority of the respondents ate snacks between meals.

Recommendations

The findings showed that there were school children who manifested several signs and symptoms of Vit A, iron, and iodine deficiencies. The following recommendations are, therefore, forwarded.

1. School administrators must be made aware that these micronutrient deficiencies can affect children in both the lowland and upland municipalities. Thus, classroom teachers must be enjoined to monitor signs and symptoms for further referral.
2. Health education classes should be organized to present and discuss the preservation of the aforementioned micronutrients. Since mothers are the first teachers of the children, they should teach their children the value of eating fuods rich in Vit A, iron, and iodine.
3. Information dissemination on the use of DOH iodized salt in all households must be done especially in the upland municipalities where the source of iodine is inadequate.
4. The primary and secondary schools cuniculum, specifically in Home Economics, should be further strengthened particularly on the values of micronutrient sources, animal and plant sources, and preservation of these nutrients when cooked

References

DEL MUNDO, FE et al 1990. *Teabook of Pediatrics and Child Health. 3" Edition.* Quezon Avenue, Quezon City. JMC Press Inc.

DEPARTMENT OF HEALTH. 1983. *DOH Narition Division of Maternal and Child Health Manual.*

— — — — — —. 1993. DOH Report 1993.

NISCE, ZENAIDA, **et. al** 1995. *Commnity Health Nursing Services, the Philippine. Edition,*